electronic gateways within twelve months."[1242] Bell Atlantic and AT&T argue that "transaction sets"[1243] to facilitate the exchange of information across electronic interfaces need to be created to support the functions of pre-ordering and ordering,[1244] provisioning,[1245] repair and maintenance,[1246] and billing.[1247] AT&T commented that electronic interfaces are scalable to different size entities, so that any phone company with at least a PC computer and a modem can utilize one of their applications.[1248]

515. Several state commissions commented that they are not opposed to national standards but want the flexibility to implement additional or different state standards.[1249] The Colorado Commission believes national technical standards are a worthy goal, but they must carefully consider differences in regional and network conditions.[1250] The California Commission, however, contends that incumbent LEC provisioning systems vary considerably by company and region.[1251] Incumbent LECs argue that there should be no national standards for

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[1242] Letter from Bruce Cox, Government Affairs Director to William Caton, Acting Secretary, FCC, July 3, 1996 (*AT&T-Bell Atlantic Joint Ex Parte*). This language was also supported by Beechwood Data Systems, a systems integrator company working with, among others, AT&T and NYNEX on electronic interfaces.

[1243] A "transaction set" refers to a set of standard data elements necessary to support any electronic exchange of information for a particular function, like provisioning.

[1244] Pre-ordering and ordering includes the exchange of information between LECs about current or proposed customer products and services or unbundled network elements or some combination thereof. *AT&T-Bell Atlantic Joint Ex Parte*. TCC includes such information as customer data on current services, and credit and payment history. TCC comments at 57 n.58, Appendix D.

[1245] Provisioning involves the exchange of information between LECs where one executes a request for a set of products and services or unbundled network elements or combination thereof from the other with attendant acknowledgements and status reports. *AT&T-Bell Atlantic Joint Ex Parte.*

[1246] Maintenance [and repair] involves the exchange of information between LECs where one initiates a request for repair of existing products and services or unbundled network elements or combination thereof from the other with attendant acknowledgements and status reports. *AT&T-Bell Atlantic Joint Ex Parte.*

[1247] Billing involves the provision of appropriate usage data by one LEC to another to facilitate customer billing with attendant acknowledgements and status reports. It also involves the exchange of information between LECs to process claims and adjustments. *AT&T-Bell Atlantic Joint Ex Parte.*

[1248] Letter from Bruce Cox, Government Affairs Director, AT&T to William Caton, Acting Secretary, FCC, July 1, 1996 (AT&T July 1 *Ex Parte*).

[1249] Pennsylvania Commission comments at 25; *but see* California Commission comments at 26-28 (standards could hinder innovation and efficiency).

[1250] Colorado Commission comments at 24-25, 27.

[1251] California Commission comments at 27 (the two biggest incumbent LECs in California have significant differences in how they provision and operate their network).

the provision, maintenance and repair of network elements because operating and administrative systems differ between incumbent LECs.[1252]

c. Discussion

516. We conclude that operations support systems and the information they contain fall squarely within the definition of "network element" and must be unbundled upon request under section 251(c)(3), as discussed below. Congress included in the definition of "network element" the terms "databases" and "information sufficient for billing and collection or used in the transmission, routing, *or other provision* of a telecommunications service."[1253] We believe that the inclusion of these terms in the definition of "network element" is a recognition that the massive operations support systems employed by incumbent LECs, and the information such systems maintain and update to administer telecommunications networks and services, represent a significant potential barrier to entry. It is these systems that determine, in large part, the speed and efficiency with which incumbent LECs can market, order, provision, and maintain telecommunications services and facilities. Thus, we agree with Ameritech that "[o]perational interfaces are essential to promote viable competitive entry."[1254]

517. Nondiscriminatory access to operations support systems functions can be viewed in at least three ways. First, operations support systems themselves can be characterized as "databases" or "facilit[ies] . . . used in the provision of a telecommunications service," and the functions performed by such systems can be characterized as "features, functions, and capabilities that are provided by means of such facilit[ies]."[1255] Second, the information contained in, and processed by operations support systems can be classified as "information sufficient for billing and collection or used in the transmission, routing, or other provision of a telecommunications service."[1256] Third, nondiscriminatory access to the functions of operations support systems, which would include access to the information they contain, could be viewed as a "term or condition" of unbundling other network elements under section 251(c)(3), or resale under section 251(c)(4). Thus, we conclude that, under any of these interpretations, operations support systems functions are subject to the nondiscriminatory access duty imposed by section

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[1252] Bell Atlantic comments at 31; PacTel comments at 40-44 (Commission could order standards for similarly situated networks but there will be many differences between incumbent LECs' ordering and billing systems); NYNEX reply comments at 32-33 (arguing that there are also differences in incumbent LECs' test equipment).

[1253] 47 U.S.C. § 153(29) (emphasis added).

[1254] Ameritech July 10 *Ex Parte* at 5.

[1255] 47 U.S.C. § 153(29).

[1256] *Id.*

251(c)(3), and the duty imposed by section 251(c)(4) to provide resale services under just, reasonable, and nondiscriminatory terms and conditions.

518. Much of the information maintained by these systems is critical to the ability of other carriers to compete with incumbent LECs using unbundled network elements or resold services. Without access to review, *inter alia*, available telephone numbers, service interval information, and maintenance histories, competing carriers would operate at a significant disadvantage with respect to the incumbent. Other information, such as the facilities and services assigned to a particular customer, is necessary to a competing carrier's ability to provision and offer competing services to incumbent LEC customers.[1257] Finally, if competing carriers are unable to perform the functions of pre-ordering, ordering, provisioning, maintenance and repair, and billing for network elements and resale services in substantially the same time and manner that an incumbent can for itself, competing carriers will be severely disadvantaged, if not precluded altogether, from fairly competing. Thus providing nondiscriminatory access to these support systems functions, which would include access to the information such systems contain, is vital to creating opportunities for meaningful competition.

519. As noted in the comments above, several state commissions have ordered real-time access or have ongoing proceedings working to develop and implement it within their jurisdictions. The New York Commission, building on its pioneering experience with the Rochester Telephone "Open Market Plan," has facilitated a working group on electronic interfaces comprised of both incumbent LECs and potential competitors.[1258] The New York Commission focused on these issues in response to the frustrations and concerns of resellers in the Rochester market.[1259] In particular, AT&T alleged that it was "severely disadvantaged due to the fact that [Rochester Telephone] has failed to provide procedures for resellers to access [their] databases for on-line queries needed to perform basic service functions [such] as scheduling customer appointments."[1260] The New York Commission has concluded that wherever possible

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[1257] For these reasons, it is most important that incumbent LECs, which currently own the overwhelming majority of local facilities in any market, provide this information to those new entrants who initially will rely to varying degrees on incumbent LEC facilities. *See e.g.*, AT&T comments at 33-34.

[1258] Order Declaring Resale Prohibitions Void and Establishing Tariff Terms, Case 94-C-0095, *et. al.* (New York Commission June 25, 1996).

[1259] Order Declaring Resale Prohibitions Void and Establishing Tariff Terms, Case 94-C-0095, *et. al*, (New York Commission June 25, 1996). In New York proceeding, resellers argued that interfaces were as important to competition as the level of the wholesale discount. *Id.*

[1260] AT&T Communications of New York, Inc. Complaint, Petition for Declaratory Judgement and for Reconsideration of Opinion No. 94-25 New York Commission, page 12.

NYNEX will provide new entrants with real-time electronic access to its systems.[1261] As another example, the Georgia Commission recently ordered BellSouth to provide electronic interfaces such that resellers have the same access to operations support systems and informational databases as BellSouth does, including interfaces for pre-ordering, ordering and provisioning, service trouble reporting, and customer daily usage.[1262] In testimony before the Georgia Commission, a BellSouth witness acknowledged that "[n]o one is happy, believe me, with a system that is not fully electronic."[1263] As noted above, Georgia ordered BellSouth to establish these interfaces within two months of its order (by July 15, 1996), but recently extended the deadline an additional month (to August 15th).[1264] Both the Illinois and Indiana Commissions ordered incumbent LECs immediately to provide to competitors access to operational interfaces at parity with those provided to their own retail customers, or submit plans with specific timetables for achieving such access.[1265] Several other states have passed laws or adopted rules ordering incumbent LECs to provide interfaces for access equal to that the incumbent provides itself.[1266] We recognize the lead taken by these states and others, and we generally rely upon their conclusions in this Order.

520. We conclude that providing nondiscriminatory access to operations support systems functions is technically feasible. Incumbent LECs today provide IXCs with different types of electronic ordering or trouble interfaces that demonstrate the feasibility of such access, and perhaps also provide a basis for adapting such interfaces for use between local service providers.[1267] Further, as discussed above, several incumbent LECs, including NYNEX and Bell Atlantic, are already testing and operating interfaces that support limited functions, and are developing the interfaces to support access to the remaining functions identified by most

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[1261] *Id.* at 13-14. The New York Commission operations working group has focused on five areas for implementation: (1) service ordering, (2) trouble administration, (3) credit and collection, (4) billing and usage detail, (5) local exchange company requirements. *Id.* at 13-17.

[1262] *See* In Re Petition of AT&T for the Commission to Establish Resale Rules, Rates, Terms and Conditions and the Initial Unbundling of Services, Docket 6352, (Georgia Commission May 29, 1996).

[1263] *Id.*

[1264] Motion for Reconsideration in Docket No. 6352-U (Georgia Commission July 2, 1996).

[1265] In the Matter of the Investigation on the Commission's Own Motion into Any and All Matters Relating to Local Telephone Exchange Competition Within the State of Indiana, Cause No. 39983, Interim Order on Bundled Resale and Other Issues (Indiana Commissions July 1, 1996); *Illinois Wholesale Order.*

[1266] *See e.g.*, Texas Commission comments at 19; In the Matter of the Commission Investigation Relative to the Establishment of Local Exchange Competition and Other Competitive Issues, Case No. 95-845-TP-COI (Ohio Commission June 12, 1996); Order Instituting Rulemaking on the Commission's Own Motion into Competition for Local Exchange Service, R. 95-04-043 and I. 95-04-044 (California Commission April 26, 1995).

[1267] *See, e.g.*, Bell Atlantic June 21 *Ex Parte*; NYNEX July 12 *Ex Parte*; NYNEX July 17 *Ex Parte*; U S West June 28 *Ex Parte*; U S West July 9 *Ex Parte.*

potential competitors.[1268] Some incumbent LECs acknowledge that nondiscriminatory access to operations support systems functions is technically feasible.[1269] Finally, several industry groups are actively establishing standards for inter-telecommunications company transactions.[1270]

521. Section 251(d)(2)(A) requires the Commission to consider whether "access to such network elements as are proprietary in nature is necessary."[1271] Incumbent LECs argue that there are proprietary interfaces used to access these databases and information. Parties seeking to compete with incumbent LECs counter that access to such databases and information is vitally important to the ability to broadly compete with the incumbent. As discussed above, competitors also argue that such access is necessary to order, provision, and maintain unbundled network elements and resold services, and to market competing services effectively to an incumbent LEC's customers. We find that it is absolutely necessary for competitive carriers to have access to operations support systems functions in order to successfully enter the local service market.

522. Section 251(d)(2)(B) requires the Commission to consider whether "the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[1272] As mentioned above, parties identified access to operations support systems functions as critical to the provision of local service. We find that such operations support systems functions are essential to the ability of competitors to provide services in a fully competitive local service market. Therefore, we conclude that competitors' ability to provide service successfully would be significantly impaired if they did not have access to incumbent LECs' operations support systems functions.

523. We thus conclude that an incumbent LEC must provide nondiscriminatory access to their operations support systems functions for pre-ordering, ordering, provisioning, maintenance and repair, and billing available to the LEC itself.[1273] Such nondiscriminatory access necessarily

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[1268] Bell Atlantic June 21 *Ex Parte*; NYNEX July 17 *Ex Parte*.

[1269] *See* NYNEX reply at 33-34; GTE reply at 23 n.28; Bell Atlantic reply at 14.

[1270] Industry standards committees include ECIC, EDI, OBF and T1M1. *See* Ameritech July 10 *Ex Parte*, Sprint June 25 *Ex Parte*, NYNEX July 17 *Ex Parte*.

[1271] 47 U.S.C. § 251(d)(2)(A).

[1272] 47 U.S.C. § 251(d)(2)(B).

[1273] We adopt the definition of these terms as set forth in the *AT&T-Bell Atlantic Joint Ex Parte* as the minimum necessary for our requirements. We note, however, that individual incumbent LEC's operations support systems may not clearly mirror these definitions. Nevertheless, incumbent LECs must provide nondiscriminatory access to the full range of functions within pre-ordering, ordering, provisioning, maintenance and repair and billing enjoyed by the incumbent LEC.

includes access to the functionality of any internal gateway systems[1274] the incumbent employs in performing the above functions for its own customers. For example, to the extent that customer service representatives of the incumbent have access to available telephone numbers or service interval information during customer contacts, the incumbent must provide the same access to competing providers. Obviously, an incumbent that provisions network resources electronically does not discharge its obligation under section 251(c)(3) by offering competing providers access that involves human intervention, such as facsimile-based ordering.[1275]

524. We recognize that, although technically feasible, providing nondiscriminatory access to operations support systems functions may require some modifications to existing systems necessary to accommodate such access by competing providers.[1276] Although, as discussed above, many incumbent LECs are actively developing these systems, even the largest and most advanced incumbent LECs have not completed interfaces that provide such access to all of their support systems functions. State commissions such as Georgia, Illinois, and Indiana, however, have ordered that such access be made available to requesting carriers in the near term. As a practical matter, the interfaces developed by incumbents to accommodate nondiscriminatory access will likely provide such access for services and elements beyond a particular state's boundaries, and thus we believe that requirements for such access by a small number of states representing a cross-section of the country will quickly lead to incumbents providing access in all regions.

525. In all cases, however, we conclude that in order to comply fully with section 251(c)(3) an incumbent LEC must provide, upon request, nondiscriminatory access to operations support systems functions for pre-ordering, ordering, provisioning, maintenance and repair, and billing of unbundled network elements under section 251(c)(3) and resold services under section 251(c)(4). Incumbent LECs that currently do not comply with this requirement of section 251(c)(3) must do so as expeditiously as possible, but in any event no later than January 1, 1997.[1277] We believe that the record demonstrates that incumbent LECs and several national standards-setting organizations have made significant progress in developing such access. This progress is also reflected in a number of states requiring competitor access to these transactional functions in the near term. Thus, we believe that it is reasonable to expect that by January 1,

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[1274] A gateway system refers to any electronic interface the incumbent LEC has created for its own use in accessing support systems for providing pre-ordering, ordering, provisioning, repair and maintenance, and billing.

[1275] Such access was all that Rochester Telephone provided to AT&T, when AT&T attempted to compete as a reseller of Rochester Telephone service. *See* Letter from Bruce Cox, Government Affairs Director, AT&T to William Caton, Acting Secretary, FCC, July 10, 1996 (AT&T July 10 *Ex Parte*).

[1276] *See supra*, Section V.G. regarding accommodation of unbundling.

[1277] *See infra*, Section VII.B. for a discussion of exemptions and suspensions for small and rural incumbent LECs.

1997, new entrants will be able to compete for end user customers by obtaining nondiscriminatory access to operations support systems functions.

526. We have considered the economic impact of our rules in this section on small incumbent LECs. For example, RTC urges us to recognize the differences between carriers in regards to computerized network administration and operational interfaces. Our requirement of nondiscriminatory access to operations support systems recognizes that different incumbent LECs possess different existing systems. We also note, however, that section 251(f) of the 1996 Act provides relief for certain small LECs from our regulations implementing section 251.

527. Ideally, each incumbent LEC would provide access to support systems through a nationally standardized gateway. Such national standards would eliminate the need for new entrants to develop multiple interface systems, one for each incumbent. We believe that the progress made by standards-setting organizations to date evidences a strong national movement toward such a uniform standard.[1278] For example, both AT&T and Bell Atlantic agree that, given appropriate guidance from the Commission, the industry can achieve consensus on national standards such that within 12 months 95% of all inter-telecommunications company transactions may be processed via nationally standardized electronic gateways.[1279]

528. In order to ensure continued progress in establishing national standards, we propose to monitor closely the progress of industry organizations as they implement the rules adopted in this proceeding. Depending upon the progress made, we will make a determination in the near future as to whether our obligations under the 1996 Act require us to issue a separate notice of proposed rulemaking or take other action to guide industry efforts at arriving at appropriate national standards for access to operations support systems.

6. Other Network Elements

a. Background

529. In the NPRM, we requested comment on other network elements the Commission should require incumbent LECs to unbundle. We tentatively concluded that "subscriber numbers" and "operator call completion services" should be unbundled.[1280] We also, under our

[1278] *See* Sprint June 25 *Ex Parte;* AT&T comments at 38; BellSouth reply at 27.

[1279] *AT&T-Bell Atlantic Joint Ex Parte.*

[1280] NPRM at para. 116.

discussion of section 251(b)(3), sought comment on nondiscriminatory access to telephone numbers, operator services, and directory assistance.[1281]

b. Comments

530. Many parties support the Commission's tentative conclusion that incumbent LECs should be required to unbundle "operator call completion services" as a separate network element.[1282] AT&T argues that such a network element would be more correctly described as the "operator systems" used to provide these services.[1283] Some state commissions have proposed or required unbundling of operator services because they are critical to new entrants' ability to enter the local exchange market.[1284] Several incumbent LECs, however, argue that they should not be required to unbundle operator services as a network element, because both alternative providers and incumbent LECs provide them on a nondiscriminatory basis.[1285] Some incumbent LECs also advance the argument that Congress did not intend for operator services to be treated as a network element, instead requiring BOCs to provide nondiscriminatory access to such services as one of the conditions for BOC entry into in-region interLATA services under section 271.[1286]

531. Commenters advance different proposals as to how to unbundle access to operator call completion services. Some competitors advocate defining the entire service as a network element so that a competitor could provide its own operator services by interconnecting at the

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[1281] NPRM at paras. 214-217.

[1282] ACSI comments at 44; ALTS comments at 32 (competitors must have nondiscriminatory access to busy line verification and call interrupt as these functionalities are currently only available from the incumbent LEC); AT&T comments at 26; Continental comments at 19; MCI comments at 18-20; Cable & Wireless comments at 20; Citizens Utilities comments at 15; Colorado Commission comments at 24; Comcast comments at 20; Competition Policy Institute comments at 16; DOJ comments at 21; Frontier comments at 17 n.32; GCI comments at 12; Telecommunications Resellers Ass'n comments at 36; TIA comments at 13 (special toll, public telephone and other calls requiring operator assistance); Wyoming Commission comments at 21; Jones Intercable reply at 30.

[1283] AT&T comments at 26 n.32; *see also* Competition Policy Institute comments at 16 (defined operator services as the live or mechanized systems which provide customers with operator services, such as call intercept, directory assistance and call completion); Jones Intercable reply at 30 n.51.

[1284] Wyoming comments at 22; *Illinois Wholesale Order*; AT&T reply 20-21 n.34. *See* Letter from Daniel Brenner, Vice President for Law & Regulatory Policy, NCTA, to Regina Keeney, Chief, Common Carrier Bureau, FCC, April 15, 1996 (NCTA April 15 *Ex Parte*).

[1285] Bell Atlantic comments at 30 (operator services is a competitive market with over 145 operator services providers in the United States); GTE comments at 44; USTA comments at 17 (incumbent LECs already provide operator services on a contract or tariff basis); U S West comments at 46 n.103.

[1286] Ameritech reply at 12 n.15; Bell Atlantic comments at 30; Cincinnati Bell comments at 19 (arguing that unbundling of operator services would impose large costs on smaller incumbent LECs); GTE comments at 44 (section 271 requires nondiscriminatory access to call completion services, not unbundled access to the relevant databases); PacTel reply at 21; SBC comments at 83-84; USTA reply at 17-18.

incumbent LEC's switch.[1287] AT&T argues that such services are not necessary for competitors that have their own comparable systems.[1288] Some competitors argue that incumbent LECs must make subscriber name and number and billing and collection services available so that a competitor can provide call completion and directory assistance with its own operators.[1289] Other parties, mostly incumbent LECs, state that such a proposal is not technically feasible.[1290] MCI further states that it needs access to incumbent LEC subscriber number information for the provision of directory assistance and call completion services by its own operator systems.[1291] Other competitors want the incumbent LEC to provide them with unbranded operator call completion services,[1292] much as some of the larger incumbent LECs and IXCs do now for smaller carriers.[1293]

532. Many commenters argue that directory assistance and the databases used to provide such services should be separately unbundled as a network element.[1294] Some commenters advocate requiring incumbent LECs to provide unbranded directory assistance as a network element.[1295] MCI notes that Pacific Bell operates a joint directory assistance database for itself and GTE, and argues that competing carriers should be able to participate in a similar type arrangement with incumbent LECs.[1296]

[1287] MCI comments at 37; AT&T reply at 21 (incumbent LECs must unbundle operator systems so that a competitor providing its own does not have to pay for the incumbent LECs' services).

[1288] AT&T comments at 26.

[1289] ACSI comments at 44.

[1290] *See* SBC reply at 22-23.

[1291] MCI comments at 37.

[1292] Unbranded or rebranded operator services involve the provision of such services by the incumbent LEC for the requesting carrier either: (1) without any identification to the customer that it is the incumbent LEC actually providing such services; or (2) in a manner that the incumbent LEC identifies itself to the customer solely as the requesting carrier for the provision of these services.

[1293] ACSI comments at 47-48; AT&T comments at 26; GCI comments at 12.

[1294] NCTA comments at 42; Teleport comments at 37; GST comments at 25; GCI comments at 12; MCI comments at 37 (MCI further recognizes directory assistance and directory listings).

[1295] Comcast comments at 20; Citizens Utilities comments at 15.

[1296] MCI comments at 33, 38 (California Commission ruling adopting this requirement is published at *Re GTE California Incorporated*, 31 CPUC 2d, 370 (1989)).

533. Some commenters argue that access to "subscriber numbers" should be unbundled and that access to the Number Assignment database should be unbundled.[1297] MCI advocates that the Commission require incumbent LECs to provide unbundled access to their subscriber number information sufficient for the provision of directory assistance and call completion service by competing carriers using their own operators.[1298] Other parties argue that such access should not be required.[1299]

c. Discussion

(1) Operator Services and Directory Assistance

534. We conclude that incumbent LECs are under the same duty to permit competing carriers nondiscriminatory access to operator services and directory assistance facilities as all LECs are under section 251(b)(3).[1300] We further conclude that, if a carrier requests an incumbent LEC to unbundle the facilities and functionalities providing operator services and directory assistance as separate network elements, the incumbent LEC must provide the competing provider with nondiscriminatory access to such facilities and functionalities at any technically feasible point. We believe that these facilities and functionalities are important to facilitate competition in the local exchange market. Further, the 1996 Act imposes upon BOCs, as a condition of entry into in-region interLATA services the duty to provide nondiscriminatory access to directory assistance services and operator call completion services.[1301] We therefore conclude that unbundling facilities and functionalities providing operator services and directory assistance is consistent with the intent of Congress.

535. As discussed in our section on nondiscriminatory access under section 251(b)(3),[1302] the provision of nondiscriminatory access to operator services and directory assistance must

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[1297] MCI comments at 19-20; ACSI comments at 43.

[1298] MCI comments at 37.

[1299] GTE comments at 43 (to the extent "subscriber numbers" means number administration, nondiscriminatory access is assured by industry guidelines and the Commission's intent to establish a number administration entity); Cincinnati Bell comments at 19 (subscriber numbers and information sufficient for billing and collection should be addressed in the bona fide request process).

[1300] *See Dialing Parity Order supra*, Section I.

[1301] 47 U.S.C. § 271(c)(2)(B)(vii)(II)-(III).

[1302] *See Dialing Parity Order supra*, Section I.

conform to the requirements of section 222, which restricts carrier's use of CPNI.[1303] In particular, access to directory assistance and underlying directory information does not require incumbent LECs to provide access to unlisted or unpublished telephone numbers, or other information that the incumbent LEC's customer has requested the LEC not to make available. In conforming to section 222, we anticipate that incumbent LECs will provide such access in a manner that will protect against the inadvertent release of unlisted customer names and numbers.

536. We note that several competitors advocate unbundling the facilities and functionalities providing operator services and directory assistance from particular resold services or the unbundled local switching element, so that a competing provider can provide these services to its customers supported by its own systems rather than those of the incumbent LEC.[1304] Some incumbent LECs argue that such unbundling, however, is not technically feasible because of their inability to route individual end user calls to multiple systems.[1305] We find that unbundling both the facilities and functionalities providing operator services and directory assistance as separate network elements will be beneficial to competition and will aid the ability of competing providers to differentiate their service from the incumbent LECs. We also note that the Illinois Commission has recently ordered such access.[1306] We therefore find that incumbent LECs must unbundle the facilities and functionalities providing operator services and directory assistance from resold services and other unbundled network elements to the extent technically feasible. As discussed above in our section on unbundled switching, we require incumbent LECs, to the extent technically feasible, to provide customized routing, which would include such routing to a competitor's operator services or directory assistance platform.[1307]

537. We also note that some competitors seek access to operator services and directory assistance in order to serve their own customers.[1308] Some of these parties argue that nondiscriminatory access to such network elements requires incumbent LECs to provide rebranded operator call completion services and directory assistance to the competing carrier's

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[1303] *See Implementation of the Telecommunications Act of 1996: Telecommunications Carriers' Use of Customer Proprietary Network Information and other Customer Information*, CC Docket No. 96-115, Notice of Proposed Rulemaking, FCC 96-221 (rel. May 17, 1996).

[1304] *See, e.g.*, AT&T comments at 26; Cable & Wireless comments at 20; Colorado Commission comments at 24; DOJ comments at 21; Frontier comments at 17 n.32; MCI comments at 18-20; Jones Intercable reply at 30.

[1305] SBC reply at 22-23.

[1306] *See Illinois Wholesale Order.*

[1307] *See infra*, Section V.I.2.

[1308] AT&T comments at 26.

customers.[1309] Incumbent LECs argue that the provision of these services on an unbranded or rebranded basis is not technically feasible because of their inability at the operator services or directory assistance platforms to identify the carrier serving the end user.[1310] As we concluded in our discussion on section 251(b)(3), we find that incumbent LECs must permit nondiscriminatory access to both operator services and directory assistance in the same manner required of all LECs.[1311] We make no finding on the technical feasibility of providing branded or unbranded service to competitors based on the record before us. We note, however, that the Illinois Commission has ordered incumbent LECs to provide rebranded operator call completion services and directory assistance to requesting competitive carriers.[1312]

538. As discussed above, incumbent LECs must provide access to databases as unbundled network elements.[1313] We find that the databases used in the provision of both operator call completion services and directory assistance must be unbundled by incumbent LECs upon a request for access by a competing provider. In particular, the directory assistance database must be unbundled for access by requesting carriers.[1314] Such access must include both entry of the requesting carrier's customer information into the database, and the ability to read such a database, so as to enable requesting carriers to provide operator services and directory assistance concerning incumbent LEC customer information. We clarify, however, that the entry of a competitor's customer information into an incumbent LEC's directory assistance database can be mediated by the incumbent LEC to prevent unauthorized use of the database. We find that the arrangement ordered by the California Commission concerning the shared use of such a database by Pacific Bell and GTE is one possible method of providing such access.[1315]

539. Section 251(d)(2)(A) requires the Commission to consider whether "access to such network elements as are proprietary in nature is necessary."[1316] Parties generally did not identify proprietary concerns with unbundling access to operator call completion services or directory

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[1309] ACSI comments at 47-48; AT&T comments at 26; Comcast comments at 20; GCI comments at 12.

[1310] SBC reply at 22-23.

[1311] *See Dialing Parity Order supra*, Section I.

[1312] *See Illinois Wholesale Order.*

[1313] *See supra*, Section V.J.

[1314] We find the joint directory assistance database used by Pacific Bell and GTE to be one method of such access. MCI comments at 38.

[1315] *See Re GTE California Incorporated*, 31 CPUC 2d 370 (1989).

[1316] 47 U.S.C. § 251(d)(2)(A).

assistance. Incumbent LECs generally did not claim a proprietary interest in their directory assistance databases. Many parties contend that proprietary interests leading to restrictions on use or sharing of such database information would injure their ability to compete effectively for local service.[1317] For the reasons described below, we find that access to the systems supporting both operator call completion services and directory assistance is necessary for new entrants to provide competing local exchange service.

540. Section 251(d)(2)(B) requires the Commission to consider whether "the failure to provide access to such network elements would impair the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer."[1318] Parties identified access to operator call completion services and directory assistance as critical to the provision of local service.[1319] Therefore we conclude that competitors' ability to provide service would be significantly impaired if they did not have access to incumbent LECs' operator call completion services and directory assistance.

(2) Subscriber Numbers

541. Some commenters argue that the Commission should require incumbent LECs to unbundle access to subscriber numbers. We conclude that no Commission action under section 251(b)(3) is required at this time to ensure nondiscriminatory access to subscriber numbers. Issues regarding access to subscriber numbers will be addressed by our implementation of section 251(e).[1320]

[1317] MCI comments at 37-38.

[1318] 47 U.S.C. § 251(d)(2)(B).

[1319] MCI comments at 37-38.

[1320] *See supra,* note 10.

VI. METHODS OF OBTAINING INTERCONNECTION AND ACCESS TO UNBUNDLED ELEMENTS

542. In this section, we address the means of achieving interconnection and access to unbundled network elements that incumbent LECs are required to make available to requesting carriers.

A. Overview

1. Background

543. Section 251(c)(2) requires incumbent LECs to provide interconnection with the LEC's network "for the facilities and equipment of any requesting telecommunications carrier."[1321] Section 251(c)(6) imposes upon incumbent LECs "the duty to provide . . . for physical collocation of equipment necessary for interconnection or access to unbundled network elements at the premises of the [LEC], except that the carrier may provide for virtual collocation if the [LEC] demonstrates to the State commission that physical collocation is not practical for technical reasons or because of space limitations."[1322] In the NPRM, we noted that section 251(c)(6) does not expressly limit the Commission's authority under section 251(c)(2) to establish rules requiring incumbent LECs to make available a variety of methods of interconnection, except in situations where the incumbent can demonstrate to the state commission that physical collocation is not practical for technical reasons or space limitations. We tentatively concluded that the Commission has the authority to require any reasonable method of interconnection, including physical collocation, virtual collocation, and meet point interconnection arrangements.[1323]

[1321] 47 U.S.C. § 251(c)(2).

[1322] 47 U.S.C. § 251(c)(6).

[1323] NPRM at para. 64. Under the Commission's *Expanded Interconnection* rules, LECs are not required to offer a collocating carrier a choice between physical and virtual collocation. *Special Access Order*, 7 FCC Rcd at 7407; *Switched Transport Order*, 8 FCC Rcd at 7404; *see also Physical Collocation Designation Order*, 8 FCC Rcd 4589 (under our *Expanded Interconnection* rules, LECs must provide virtual collocation where: virtual collocation is available on an intrastate basis; a LEC has negotiated an interstate virtual collocation arrangement; LECs are exempted from providing physical collocation because of space constraints; or a state commission has granted a waiver). Also, *see* Section VI.B.1.b. regarding the definitions of physical and virtual collocation.

2. Comments

544. Many parties agree with our tentative conclusion that we have the authority to require any reasonable method of interconnection.[1324] The Illinois Commission states that the purpose of 251(c)(6) is to eliminate any question about the Commission's authority to require physical collocation, and not to limit the type of interconnection incumbent LECs are required to provide under 251(c)(2).[1325]

545. CAPs and IXCs argue that incumbent LECs should be required to offer competitive entrants the choice between physical and virtual collocation, regardless of whether it is practical to offer physical collocation at a particular LEC premises.[1326] Consumer Federation of America and the Consumers Union argue that the Commission can and should order physical and virtual collocation.[1327] MCI contends that interconnectors have the right to choose virtual or physical collocation, or both, and should have the right to switch from one arrangement to another while paying only the actual costs of such a change.[1328] Sprint argues that the authority to require physical collocation necessarily includes the authority to require less invasive forms of collocation, such as virtual.[1329] Hyperion contends that small carriers lack the financial resources to make the economic investment necessary for physical collocation at every end office. Hyperion suggests that permitting new entrants to request virtual or physical collocation, depending upon their requirements would encourage competition.[1330] ACTA asserts that the cost of converting existing virtual collocation arrangements to physical should be borne by the incumbent LEC.[1331]

[1324] *See, e.g.*, MFS comments at 17-18 (if Congress meant that 251(c)(6) collocation was the exclusive means of obtaining interconnection or access to unbundled elements, then subsections (c)(2) and (c)(3) would not have been required); Teleport comments at 26; Citizens Utilities comments at 11; Illinois Commission comments at 33; Pennsylvania Commission comments at 22; Sprint reply at 21.

[1325] Illinois Commission comments at 33; MFS comments at 18 (no inference can be drawn that Congress intended any limitation on the Commission's authority to require forms of interconnection other than physical collocation, especially in light of section 251(i)).

[1326] *See, e.g.*, AT&T comments at 41; Hyperion comments at 14; MFS comments at 23.

[1327] CFA/CU comments at 14.

[1328] MCI comments at 56.

[1329] Sprint Comments at 19.

[1330] Hyperion comments at 15.

[1331] ACTA comments at 16.

546. Several parties urge the Commission to require interconnection at "meet points."[1332] Teleport states that incumbent LECs currently provide meet point interconnection arrangements between one another's facilities and are thus obligated to provide such arrangements to others.[1333] Teleport also claims that requiring meet point arrangements would be pro-competitive because it would allow competitors the flexibility to construct more efficient networks by eliminating the need to match the incumbent LEC's network.[1334]

547. Incumbent LECs respond that the statute does not give the Commission authority to require virtual collocation in addition to physical collocation.[1335] Ameritech argues that Congress specifically addressed collocation in section 251(c)(6), and that it would be inappropriate to mandate virtual collocation pursuant to the general duty under section 251(c)(2) to provide interconnection. It contends that, under principles of statutory construction, the specific language of section 251(c)(6), which provides for virtual collocation only where physical collocation is not practical, should govern the general language of section 251(c)(2).[1336]

548. GTE claims that section 251(c)(2) does not provide for any Commission role in specifying acceptable forms of interconnection.[1337] Bell Atlantic and BellSouth claim that meet point interconnection arrangements are very complex and should not be mandated by the Commission or the states, but rather left to the negotiation process.[1338] PacTel argues that incumbent LECs should not be required to develop new network capabilities or expand current network facilities to interconnect with competitors.[1339]

[1332] A meet point is a point, designated by two carriers, at which one carrier's responsibility for service begins and the other carrier's responsibility ends.

[1333] Teleport reply at 25; Sprint reply 21-22 (argues for a "mid-span" meet arrangement whereby two carriers' fiber optic cables would be spliced together at a point between two repeaters).

[1334] Teleport reply at 25.

[1335] *See, e.g.*, Bell Atlantic comments at 34; PacTel comments at 36.

[1336] Ameritech comments at 24.

[1337] GTE comments at 22.

[1338] Bell Atlantic comments at 22; BellSouth comments at 23.

[1339] PacTel comments at 19.

3. Discussion

549. We conclude that, under sections 251(c)(2) and 251(c)(3), any requesting carrier may choose any method of technically feasible interconnection or access to unbundled elements at a particular point. Section 251(c)(2) imposes an interconnection duty at any technically feasible point; it does not limit that duty to a specific method of interconnection or access to unbundled elements.

550. Physical and virtual collocation are the only methods of interconnection or access specifically addressed in section 251. Under section 251(c)(6), incumbent LECs are under a duty to provide physical collocation of equipment necessary for interconnection unless the LEC can demonstrate that physical collocation is not practical for technical reasons or because of space limitations. In that event, the incumbent LEC is still obligated to provide virtual collocation of interconnection equipment. Under section 251, the only limitation on an incumbent LEC's duty to provide interconnection or access to unbundled elements at any technically feasible point is addressed in section 251(c)(6) regarding physical collocation. Unless a LEC can establish that the specific technical or space limitations in subsection (c)(6) are met with respect to physical collocation, we conclude that incumbent LECs must provide for any technically feasible method of interconnection or access requested by a competing carrier, including physical collocation.[1340] If, for example, we interpreted section 251(c)(6) to limit the means of interconnection available to requesting carriers to physical and virtual collocation, the requirement in section 251(c)(2) that interconnection be made available "at any technically feasible point" would be narrowed dramatically to mean that interconnection was required only at points where it was technically feasible to collocate equipment. We are not pursuaded that Congress intended to limit interconnection points to locations only where collocation is possible.

551. Section 251(c)(6) provides the Commission with explicit authority to mandate physical collocation as a method of providing interconnection or access to unbundled elements. Such authority was previously found lacking by the U.S. Court of Appeals for the D.C. Circuit in *Bell Atlantic v. FCC*,[1341] which was decided prior to enactment of the 1996 Act. While section 251(c)(6) limits an incumbent LEC's duty to provide physical collocation in certain circumstances, we find that it does not limit our authority to require, under sections 251(c)(2) and (c)(3), the provision of virtual collocation. We note that under our *Expanded Interconnection* rules, that were amended subsequent to the Bell Atlantic decision, competitive entrants using physical collocation were required by many incumbent LECs to convert to virtual collocation. If the Commission concluded that subsection (c)(6) places a limitation on our authority to require

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[1340] Because we require incumbent LECs to offer virtual collocation in addition to physical collocation, we reject the suggestion of ACTA that the cost of converting from virtual to physical collocation be borne by the incumbent LEC. *See* ACTA comments at 16.

[1341] *Bell Atlantic Telephone Companies v. FCC*, 24 F.3d 1441 (D.C. Cir. 1994) (Bell Atlantic v. FCC).

virtual collocation, competitive providers would be required to undertake costly and burdensome actions to convert back to physical collocation even if they were satisfied with existing virtual collocation arrangements. We conclude that Congress did not intend to impose such a burden on requesting carriers that wish to continue to use virtual collocation for purposes of section 251(c). Further, the record indicates that this requirement would be costly and would delay competition.[1342] In short, we conclude that, in enacting section 251(c)(6), Congress intended to expand the interconnection choices available to requesting carriers, not to restrict them.

552. We also conclude that requiring incumbent LECs to provide virtual collocation and other technically feasible methods of interconnection or access to unbundled elements is consistent with Congress's desire to facilitate entry into the local telephone market by competitive carriers. In certain circumstances, competitive carriers may find, for example, that virtual collocation is less costly or more efficient than physical collocation. We believe that this may be particularly true for small carriers which lack the the financial resources to physically collocate equipment in a large number of incumbent LEC premises.[1343] Moreover, since requesting carriers will bear the costs of other methods of interconnection or access, this approach will not impose an undue burden on the incumbent LECs.

553. Consistent with this view, other methods of technically feasible interconnection or access to incumbent LEC networks, such as meet point arrangements, in addition to virtual and physical collocation, must be available to new entrants upon request.[1344] Meet point arrangements (or mid-span meets), for example, are commonly used between neighboring LECs for the mutual exchange of traffic, and thus, in general, we believe such arrangements are technically feasible.[1345] Further, although the creation of meet point arrangements may require some build out of facilities by the incumbent LEC, we believe that such arrangements are within the scope of the obligations imposed by sections 251(c)(2) and 251(c)(3). In a meet point arrangement, the "point" of interconnection for purposes of sections 251(c)(2) and 251(c)(3)

[1342] *See* Teleport comments at 32; ALTS comments at 23; Time Warner comments at 42-44 (objecting to non-recurring charges for the reconnection of existing interconnected virtual collocation services to a replacement physical collocation arrangement).

[1343] *See* Hyperion comments at 15.

[1344] *See* Teleport comments at 26-30; *see also* Washington Utilities and Transportation Commission, *Fourth Supplemental Order Rejecting Tariff Filings and Ordering Refiling*; Granting Complaints, in Part, (Washington Commission Oct. 31, 1995), Docket No. UT-941464, at 45; *Application of Electric Lightwave, Inc., MFS Intelnet of Oregon, Inc., and MCI Metro Access Transmission Services, Inc.*, Public Utility Commission of Oregon Order, Order No. 96-021, (Oregon Commission Jan. 12, 1996), at 68-69; *Rules for Telecommunications Interconnection and Unbundling*, Arizona Corporation Commission Order, Decision No. 59483, (Arizona Commission Jan. 11, 1996), Proposed Rule R14-2-1303 (Attachment E hereto).

[1345] The Michigan Commission recently required Ameritech to provide meet point interconnection. Michigan Public Service Commission, Case No. U-10860 (Michigan June 5, 1996) at 18 n.4.

remains on "the local exchange carrier's network"[1346] (*e.g.*, main distribution frame, trunk-side of the switch), and the limited build-out of facilities from that point may then constitute an accommodation of interconnection.[1347] In a meet point arrangement each party pays its portion of the costs to build out the facilities to the meet point. We believe that, although the Commission has authority to require incumbent LECs to provide meet point arrangements upon request, such an arrangement only makes sense for interconnection pursuant to section 251(c)(2) but not for unbundled access under section 251(c)(3). New entrants will request interconnection pursuant to section 251(c)(2) for the purpose of exchanging traffic with incumbent LECs. In this situation, the incumbent and the new entrant are co-carriers and each gains value from the interconnection arrangement. Under these circumstances, it is reasonable to require each party to bear a reasonable portion of the economic costs of the arrangement. In an access arrangement pursuant to section 251(c)(3), however, the interconnection point will be a part of the new entrant's network and will be used to carry traffic from one element in the new entrant's network to another. We conclude that in a section 251(c)(3) access situation, the new entrant should pay all of the economic costs of a meet point arrangement. Regarding the distance from an incumbent LEC's premises that an incumbent should be required to build out facilities for meet point arrangements, we believe that the parties and state commissions are in a better position than the Commission to determine the appropriate distance that would constitute the required reasonable accommodation of interconnection.

554. Finally, in accordance with our interpretation of the term "technically feasible," we conclude that, if a particular method of interconnection is currently employed between two networks, or has been used successfully in the past, a rebuttable presumption is created that such a method is technically feasible for substantially similar network architectures. Moreover, because the obligation of incumbent LECs to provide interconnection or access to unbundled elements by any technically feasible means arises from sections 251(c)(2) and 251(c)(3), we conclude that incumbent LECs bear the burden of demonstrating the technical infeasibility of a particular method of interconnection or access at any individual point.

[1346] 47 U.S.C. § 251(c)(2).

[1347] *See, supra* Section IV.E., above, discussing accommodation of interconnection.

B. Collocation

1. Collocation Standards

a. Adoption of National Standards

(1). Background

555. In the NPRM we tentatively concluded that we should adopt national rules for virtual and physical collocation. This tentative conclusion was based on the belief that national standards would help to speed the development of competition.[1348] We also sought comment on specific national standards that we might adopt, and on whether any specific state approaches would serve as an appropriate model.[1349]

(2). Comments

556. Incumbent LECs and state commissions argue that collocation is a state matter and that terms and conditions for collocation should be negotiated between the parties[1350] or determined by the states.[1351] Some parties recommend that, to the extent national guidelines are necessary, the Commission should readopt the standards established in the *Expanded Interconnection* proceeding.[1352] Teleport and the New York Commission suggest that, if we adopt rules, we should use the New York Commission's "comparably efficient interconnection" standard as a model.[1353] The Alabama and Missouri Commissions support the approach to

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[1348] NPRM at para. 24.

[1349] NPRM at para. 70.

[1350] BellSouth comments at 23; SBC comments at 64; USTA comments at 19; PacTel comments at 34.

[1351] *See, e.g.*, New York Commission comments at 13-14; *see also* Ohio Commission comments at 29; Florida Commission comments at 22; Oregon Commission comments at 23.

[1352] USTA comments at 19; Bell Atlantic comments at 32-33; Sprint reply at 22; California Commission comments at 24, Texas Commission comments at 13-14; District of Columbia Commission comments at 20.

[1353] Teleport comments at 30 (this standard is consistent with, if not demanded by, the requirements for nondiscriminatory interconnection in section 251(c)(2)(C)); New York Commission comments at 34 (the Commission should not set specific rules, but should adopt guidelines that incumbent LECs offer comparably efficient interconnection).

interconnection that each adopted in their respective states.[1354] Pacific Telesis supports California's "preferred outcomes approach."[1355]

557. Competitive providers generally favor national standards for collocation.[1356] MFS argues that Congress did not intend for the states to have a policy role in collocation matters, and that unambiguous national guidelines are needed to prevent incumbent LECs from engaging in discriminatory practices and to avoid duplicative litigation in multiple forums.[1357]

(3). Discussion

558. We conclude that we should adopt explicit national rules to implement the collocation requirements of the 1996 Act. We find that specific rules defining minimum requirements for nondiscriminatory collocation arrangements will remove barriers to entry by potential competitors and speed the development of competition. Our experience in the *Expanded Interconnection* proceeding indicates that incumbent LECs have an economic incentive to interpret regulatory ambiguities to delay entry by new competitors.[1358] We and the states should therefore adopt, to the extent possible, specific and detailed collocation rules. We find, however, that states should have flexibility to apply additional collocation requirements that are otherwise consistent with the 1996 Act and our implementing regulations.

[1354] Alabama Commission comments at 17 (under Alabama's interconnection model, parties negotiate collocation arrangements and may petition the Alabama commission to require collocation under specific terms and conditions should negotiations fail); Missouri Commission comments at 12 (The Missouri Commission requires the incumbent LEC to provide the type of interconnection that the interconnecting carrier requests, either physical or virtual. The Commission also requires that large incumbent LECs tariff their interconnection arrangements, and that collocators pay a deposit).

[1355] PacTel comments at 36.

[1356] Intermedia comments at 6; Teleport comments at 30; ALTS comments at 21; Hyperion comments at 14; ACSI comments at 14; NCTA comments at 34; Telecommunications Resellers Ass'n comments at 46; Time Warner comments at 32; MFS comments at 20-21; AT&T comments at 39.

[1357] MFS comments at 20-21.

[1358] Our review of the LECs' initial physical and virtual collocation tariffs raised significant concerns regarding the implementation of our *Expanded Interconnection* requirements and resulted in the designation of numerous issues for investigation. The Commission has not yet reached decisions on most of these issues, though it has found that certain rates for virtual collocation were unlawful. *See Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection Through Virtual Collocation for Special Access and Switched Transport*, 10 FCC Rcd 6375 (Com. Car. Bur. 1995)(*Phase I Report and Order*); *see also Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection for Special Access*, 8 FCC Rcd 6909 (Com. Car. Bur. 1993) (*Physical Collocation Designation Order*); *Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection Through* Virtual Collocation for Special Access and Switched Transport, 10 FCC Rcd 11116 (Com. Car. Bur. 1995)(*Virtual Collocation Designation Order*).

b. Adoption of *Expanded Interconnection* Terms and Conditions for Physical and Virtual Collocation under Section 251

(1). Background

559. In our *Expanded Interconnection* proceeding, we required LECs to offer expanded interconnection to all interested parties, which allowed competitors and end users to terminate their own special access and switched transport access transmission facilities at LEC central offices.[1359] We required Tier 1 LECs[1360] to offer physical collocation, with the interconnecting party paying the LEC for central office floor space.[1361] We required that LECs provide space to interested parties on a first-come first-served basis, and that they provide virtual collocation when space for physical collocation is exhausted.[1362] Under virtual collocation, interconnectors are allowed to designate central office transmission equipment dedicated to their use, as well as to monitor and control their circuits terminating in the LEC central office. Interconnectors, however, do not pay for the incumbent's floor space under virtual collocation arrangements and have no right to enter the LEC central office. Under our virtual collocation requirements, LECs must install, maintain, and repair interconnector-designated equipment under the same intervals and with the same or better failure rates for the performance of similar functions for comparable LEC equipment.[1363]

560. In the *Expanded Interconnection* proceeding, we required the LECs to file tariffs to implement our virtual and physical collocation requirements. Our initial review of the LECs'

[1359] *Expanded Interconnection with Local Telephone Company Facilities, First Report and Order*, 7 FCC Rcd 7369 (1992)(*Special Access Order*), *vacated in part and remanded, Bell Atlantic*, 24 F.3d 1441 (1994); *First Reconsideration*, 8 FCC Rcd 127 (1993); *vacated in part and remanded, Bell Atlantic*, 24 F.3d 1441; *Second Reconsideration*, 8 FCC Rcd 7341 (1993); *Second Report and Order*, 8 FCC Rcd 7374 (1993)(*Switched Transport Order*), *vacated in part and remanded, Bell Atlantic Telephone Cos., v. FCC*, 24 F.3d 1441; *Remand Order*, 9 FCC Rcd 5154 (1994)(*Virtual Collocation Order*), *remanded for consideration of 1996 Act, Pacific Bell, et al. v. FCC*, 81 F.3d 1147 (1996) (collectively referred to as *Expanded Interconnection*). Interstate access is a service traditionally provided by local telephone companies and enables IXCs and other customers to originate and terminate interstate telephone traffic. Special access is a form of interstate access that uses dedicated transmission lines between two points, without switching the traffic on those lines. Switched transport is another form of interstate access comprising the transmission of traffic between interexchange carriers' (or other customers') points of presence and local telephone companies' end offices, where the traffic is switched and routed to end users.

[1360] Tier 1 LECs are local exchange carriers having $100 million or more in "total company annual regulated revenues." *Commission Requirements for Cost Support Material to be Filed with 1990 Annual Access Tariffs*, 5 FCC Rcd 1364, 1364 (Com. Car. Bur. 1990)(*1990 Cost Support Order*).

[1361] The interconnecting party uses the space to locate equipment necessary to terminate its transmission links for interconnection with the LEC's network. The interconnector has physical access to this space in the LEC central office to install, maintain, and repair its transmission equipment. *Special Access Order*, 7 FCC Rcd at 7391.

[1362] 7 FCC Rcd at 7391.

[1363] *Special Access Order*, 7 FCC Rcd at 7394; *Switched Transport Order*, 8 FCC Rcd at 7393.

tariffs raised significant concerns regarding the LECs' provision of physical and virtual collocation.[1364] Consequently, the Bureau partially suspended the rates proposed by many of the LECs and allowed these rates to take effect subject to investigation and an accounting order.

561. In 1994, the U.S. Court of Appeals for the District of Columbia Circuit found that the FCC lacked the authority under section 201 of the 1934 Communications Act to require physical collocation and remanded all other issues to the Commission.[1365] On remand, we adopted rules for both special access and switched transport that required LECs to provide either virtual or physical collocation, at the LECs' option.[1366] Those rules currently are in place, although the court of appeals remanded the *Remand Order* to us to consider the impact of the 1996 Act on those rules.[1367] In the 1996 Act, Congress specifically directed incumbent LECs to provide physical collocation for interconnection and access to unbundled network elements, absent technical or space constraints, pursuant to section 251(c)(6) of the Communications Act.[1368]

562. We sought comment in the NPRM on whether, for purposes of implementing physical and virtual collocation under section 251, we should readopt the standards set out in our *Expanded Interconnection* proceeding and, if so, how to adapt those standards to reflect the new statutory requirements and other policy considerations of the 1996 Act.[1369]

(2). Comments

563. To the extent parties addressed the substantive content of national rules, most favor readoption of the *Expanded Interconnection* rules. Assuming that national standards are to be adopted, several state commissions and a number of incumbent LECs generally favor readoption of our *Expanded Interconnection* requirements because they were developed based on an

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[1364] *See Special Access Physical Collocation Designation Order*, 8 FCC Rcd 6909; *Virtual Collocation Designation Order*, 10 FCC Rcd 11116; *see also supra*, note 1358.

[1365] *Bell Atlantic v. FCC*, 24 F.3d 1441.

[1366] *Remand Order*, 9 FCC Rcd 5154.

[1367] *Pacific Bell et al. v. FCC*, 81 F.3d 1147 (D.C. Cir. 1996). As discussed in Section VI.B.2.a, below, we find that the 1996 Act does not supplant or otherwise alter our *Expanded Interconnection* rules for interstate interconnection services provided pursuant to section 201 of the Communications Act.

[1368] 47 U.S.C. § 251(c)(6).

[1369] NPRM at para. 71.

extensive record.[1370] BellSouth, in contrast, argues that the Commission's *Expanded Interconnection* rules are no longer necessary under the 1996 Act, because parties should be free to negotiate agreements between themselves without being governed by FCC rules.[1371] SBC and Pacific Telesis argue that physical collocation should be negotiated in order to allow parties to address unique requirements.[1372] Cincinnati Bell argues that the FCC should not establish regulations regarding services that are ancillary to collocation such as rent, insurance, and equipment maintenance, because they are not activities within the purview of Title II of the Communications Act.[1373]

564. CAPs and IXCs also generally favor readoption of our *Expanded Interconnection* requirements.[1374] Several commenters advocate specific amendments that they believe are required by the 1996 Act or by intervening circumstances.[1375] MFS, however, argues that the purposes of the 1996 Act are much broader than those of the *Expanded Interconnection* proceedings and that the collocation standards under section 251 should reflect this difference.[1376] MCI contends that existing collocation rules, terms, and conditions should be significantly modified.[1377] Teleport asserts that the Commission should require all incumbent LECs to refile with the FCC their most recent physical collocation tariffs, subject to the previously applicable accounting orders.[1378]

[1370] Bell Atlantic comments at 33; Cincinnati Bell comments at 15; PacTel comments at 35; NYNEX comments at 66; Roseville Tel. comments at 2-3; SNET comments at 15; GTE comments at 24 (*Expanded Interconnection* rules should be readopted if used to identify acceptable outcomes and not to dictate behavior); *see also* Alabama Commission comments at 17; Texas Commission comments at 14; Illinois Commission comments at 35.

[1371] BellSouth comments at 24 (the Act sets up a new framework under which the parties must be free to negotiate arrangements "unencumbered by excessive rules and regulations").

[1372] PacTel reply at 12; SBC comments at 64 (collocation should be negotiated and should not be subject to uniform requirements because of the differing conditions at each location).

[1373] Cincinnati Bell comments at 15.

[1374] *See, e.g.*, Sprint comments at 21; Time Warner comments at 38; Intermedia comments at 6.

[1375] ALTS comments at 24; Telecommunications Resellers Ass'n comments at 47; Intermedia comments at 9 (incumbent LECs must tariff cross-connect elements for services not currently offered, such as packet switching, frame relay, ATM, and SONET services); ACSI comments at 16 (revised *Expanded Interconnection* rules should reflect resolution of issues raised in designation orders).

[1376] MFS comments at 22; *see also* MCI comments at 54.

[1377] MCI comments at 58.

[1378] Teleport comments at 31; Intermedia comments at 7 (arguing that LECs must establish terms and conditions for physical collocation within 30 days).

(3). Discussion

565. We conclude that we should adopt the existing *Expanded Interconnection* requirements, with some modifications, as the rules applicable for collocation under section 251.[1379] Those rules were established on the basis of an extensive record in the *Expanded Interconnection* proceeding, and are largely consistent with the requirements of section 251(c)(6). Adoption of those requirements for purposes of collocation under section 251, moreover, has substantial support in the record of this proceeding. Thus, the standards established for physical and virtual collocation in our *Expanded Interconnection* proceeding will generally apply to collocation under section 251. The most significant requirements of *Expanded Interconnection* are specifically set out in rules we adopt here. We address pricing and rate structure issues separately, in section VII below.

566. We find, however, that certain modifications to our *Expanded Interconnection* requirements are necessary to account for specific provisions of section 251(c)(6) and service arrangements that differ from those contemplated in our *Expanded Interconnection* orders.[1380] For example, the *Expanded Interconnection* requirements apply to Tier 1 LECs that are not NECA pool members, and section 251 applies to "incumbent LECs," though there is an exemption for certain rural carriers.[1381] *Expanded Interconnection* also allows end-users to interconnect their equipment, while section 251 requires that interconnection and access to unbundled network elements be provided to "any requesting telecommunications carrier."[1382] Accordingly, we set forth below several modifications to the terms and conditions for collocation as they are described in our *Expanded Interconnection* orders for application in implementing section 251. We believe that, in light of the expedited statutory time frame for this rulemaking and limited record addressing the specific terms and conditions for collocation under section 251 in this proceeding, it would be impractical and imprudent to develop a large number of new substantive collocation requirements in this order. We may consider the need for additional or different requirements in a subsequent proceeding, if we determine that such action is warranted.

567. The most significant difference between the *Expanded Interconnection* rules and the collocation rules we adopt to implement the 1996 Act concerns the collocation tariffing requirement. As discussed below, the 1996 Act does not require that collocation be federally

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[1379] *See Remand Order*, 9 FCC Rcd at 5168-69, 5174-83.

[1380] *See supra*, note 1358, 1359.

[1381] *See infra*, Section XII.

[1382] *See* 47 U.S.C. § 251(c)(2), (3).